(062) Math 131: Finite Mathematics.MkUpQzCh135810: June 2, 2007

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Contents

Marks: 35; Time: 50 Minutes

NAME:...

I.D.#:

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NOTE: SHOW ALL STEPS OF THE SOLUTION.

NO CREDIT FOR ANSWERS WITHOUT COMPLETE SOLUTION. The questions are not in any order of difficulty at all. Only the nonprogramable calculators are allowed.

Q.1.$(Marks:5).71AL31.$ $(Car\ Sales).$ A used-car dealer bought two cars for $ 2900.

He sold one at a gain of 10 % and another at a loss of 5 % and still made a gain (profit) of $ 185 on the whole transaction.

Find the cost of each car.

Q.2.$(Marks:5).84AL10.$ A box with square base and no top is to be made from a square piece of metal by cutting $2-inch$ squares from each corner and folding up the sides.

Find the dimensions of the metal sheet if the volume of the box is to be 50 cubic inches.

Q.3. $(Marks:5)57TB28.$ Parking Lot. A company parking lot is 120 feet long and 80 feet wide.

Due to an increase in personnel, it is decided to double the area of the lot by adding strips of equal width to one end and one side.

Find the width of one such strip.

Q.4. $(Marks:5)$228TB16. A debt of $ 8000 due in five years is to be repaid by a payment of $ 3000 now and a second payment at the end of five years.

How much should the second payment be if the interest rate is equal to 8 % compounded monthly?

Q.5.402TB38.$(Marks:5)$.

Discussion Groups. A history instructor wants to split a class of 10 students into three discussion groups.

One group will consist 4 of students and discuss topic A.

The second and third groups will discuss topics B and C, respectively, and consist of 3 students each.

In how many ways can the instructor form the groups?

Q.6. 437TB51.$(Marks:5)$ Committee Selection. Suppose six female and five male students wish to fill three openings on a campus committee on cultural diversity.

If three of the students are chosen at random for the committee, find the probability that all three are female, given that at least one is female.

Q.7.327AL22.$(Marks:5)$ A business firm has received 150 applicants for a vacant position. Of these applicants, 90 had a university degree, 45 a job related experience, and 30 had both.

(a) What is the probability that the person selected at random for the job will have either a degree or the experience or both a degree as well as the experience?

(b) What is the probability that the person selected at random for the job will have neither a degree nor the experience?